AMENDMENTS TO THE CLAIMS:

The following listing of the claims replaces all prior versions and listings of the claims in the present application:

1. (currently amended) A storage system, comprising a plurality of storage devices arranged in an array having M rows and N columns, M being greater than or equal to three and N being greater than or equal to three, the array having a Hamming distance of d when P of the storage devices are configured as parity storage devices and (M x N) – P of the storage devices are configured as data storage devices, ~~and~~ the array having a Hamming distance of d + 1 when P + 1 of the storage devices are configured as parity storage devices and (M x N) – (P + 1) of the storage devices are configured as data storage devices, the array being configured with P + 1 of the storage devices as parity storage devices and (M x N) – (P + 1) of the storage devices as data storage devices, and information contained in the parity storage devices being determined based on a system of linear equations in which the linear equations based on the M rows being based on simple parity and the linear equations based on the N rows being based on a generalized parity code.

2. (original) The storage system according to claim 1, wherein P = M + N -1.

3. (original) A method of increasing the Hamming distance of an array of storage devices having M rows and N columns, M being greater than or equal to three and N being greater than or equal to three, the method comprising steps of:

forming the M x N array by

forming a first predetermined number of rows of the array to each have a second predetermined number of data storage devices and a third predetermined number of parity storage devices, the third predetermined number being greater than or equal to one, and

forming M minus the first predetermined number of rows of the array to have N parity storage devices;

increasing a number of parity devices in the M x N array by changing a selected data storage device in one of the first predetermined number of rows to be a parity storage device.

4. (canceled)

5. (original) A method of recovering data stored on a failed storage device in an array of storage devices having M rows and N columns, M being greater than or equal to three and N being greater than or equal to three, a first predetermined number of rows of the array each having a second predetermined number of data storage devices and a third predetermined number parity storage devices, the third predetermined number being greater than or equal to one, one of the rows of the array having the second predetermined number minus one data storage devices and the third predetermined number plus one parity storage devices, a fourth predetermined number of rows of the array having N parity storage devices, the first predetermined number plus the fourth predetermined number plus one equaling M, and the second predetermined number plus the third predetermined number equaling N, the method comprising steps of:

forming a plurality of row equations that are based on parity;

forming a plurality of column equations that are based on an orthogonal parity code and includes a higher-order multiplier that changes each column, the higher order multiplier selected to generate a finite basic field of N elements; and

recovering the data stored on the failed storage device based on the row equations and the column equations.

6. (original) The method according to claim 5, wherein the third predetermined number equals one, and

wherein the step of forming a plurality of row equations is based on simple parity.

7. (canceled)

8. (original) A method of recovering data stored on a failed storage device in an array of storage devices having M rows and N columns, M being greater than or equal to three and N being greater than or equal to three, a first predetermined number of rows of the array each having a second predetermined number of data storage devices and a third predetermined parity storage devices, the third predetermined number being greater than or equal to one, a fourth predetermined number of rows the array having N parity storage devices, the method comprising steps of:

forming a plurality of row equations that are based on parity;

forming a plurality of column equations that are based on an orthogonal parity code and includes a higher-order multiplier that changes each column, the higher order multiplier selected to generate a finite basic field of N of elements; and

recovering the data stored on the failed storage device based on the row equations and the column equations.

9. (original) The method according to claim 8, wherein the third predetermined number equals one, and

wherein the step of forming a plurality of row equations is based on simple parity.

10. (original) The method according to claim 8, wherein the array has $M + N - 1$ parity storage devices.